

# Strategy Research Project

## Fixing What Was Not Broken: A Future for Fires

by

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United States Army



United States Army War College  
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USAWC STRATEGY RESEARCH PROJECT

**FIXING WHAT WAS NOT BROKEN: A FUTURE FOR FIRES**

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## ABSTRACT

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## FIXING WHAT WAS NOT BROKEN: A FUTURE FOR FIRES

We must return ‘back to the basics’ to prepare new soldiers, maintain our core competencies as field artilleryman, and develop young leaders. The FA branch along with the Fires Center of Excellence is committed to maintaining our exceptional force and advancing the force of tomorrow, through basic principles, new learning concepts and adaptability to the changing joint fight.<sup>1</sup>

—BG Thomas Vandal  
Commandant, FCOE

Today, the United States and its partners find themselves competing for global influence in an era in which they are unlikely to be fully at war or fully at peace. “As we look to the future, our Army faces a complex and uncertain environment that will challenge our soldiers, leaders, and organizations in many ways.”<sup>2</sup> The challenge is to prepare for this unknown hybrid threat in order to protect U.S. vital national interests. The most sensitive instrument of national power used to achieve national objectives is the Military. The critical missions the Nation deems a priority, will be carried out by our Service men and women at home and abroad. Therefore, it is up to the Nation and its military leaders to effectively lead and resource its military force, setting the conditions to achieve those missions set before them. To this end, the Fires community must address what requirements and capabilities should exist to face the future fight. As the Nation begins to close out operations in Afghanistan over the next couple of years, the Field Artillery (FA) branch needs to anticipate future requirements and ways in which to improve the efficiency and effectiveness of the branch. Considering the fiscally demanding environment that currently exists, previous predictions and future programs and force design approved years ago, must be readdressed. Existing issues, if not appropriately readdressed to account for changes in the operating environment as well

as lessons learned from over ten years of war and six years of modularity, could have strategic implications for the future fighting force in terms of force structure, design, and capabilities. In particular, the low core competency level of artilleryman is a result of Modularity, the Army's transformation concept of moving away from a division-centric task organized force towards a much smaller, modular brigade-centric force that is self-contained, expeditionary in nature and capable of supporting contingencies across the full spectrum of operations. Another cause of their low competency level has been several years of persistent conflict in which artilleryman often were required to execute non-standard missions in support of operations in Afghanistan and Iraq, which continues to persist. Additionally, the effective employment of precision guided munitions (PGM) during this same time frame, has created a thought process that the utility of mass quantities of conventional munitions in future conflicts, is no longer required. Consequently, there may be a false sense of security that precision guided munitions will always achieve the desired effect at a lower financial cost and reduced logistical burden. However, better understanding U.S. military capabilities and its reliance on technology, U.S. adversaries will undoubtedly seek alternative methods to disrupt or deny effective application of certain systems. For example, U.S adversaries could attack satellites rendering global positioning system (GPS) munitions useless, thus requiring once again, the reliance on conventional munitions as a part of degraded operations. In light of these issues, the purpose of this paper focuses on two areas that must be readdressed; fire support training and organization and the role of conventional artillery munitions as part of the future force. These issues affect the entire Army and

must be addressed in a responsible manner now in order to plan for tomorrow and the future of Fires.

### Background

The Army's ability to effectively leverage innovation and change has made a tremendous impact on the way in which it has fought throughout history. During the interwar years of World War I and World War II, postwar boards convened to capture lessons learned to improve the effectiveness of combined arms operations.<sup>3</sup> During this time, it was determined that the need to control indirect fires was required resulting in the creation of the artillery observer. Few envisioned how useful the artillery forward observer (FO) would become until he was used in combat for the first time. What resulted was a system that worked so well, the supporting artillery became regarded as a "utility." "A quick call by a forward observer over a field radio summoned a barrage of artillery shells that could quickly eliminate an enemy outpost or formation and allow infantrymen to proceed without harm, much like turning on the water to put out a fire".<sup>4</sup> The forward observer has repeatedly demonstrated his influence as a lethal contributor to the combined arms fight. Capable of coordinating large amounts of fire power through the employment of mortars, cannon and rocket artillery, integrating Close Air Support (CAS), and coordination of attack aviation; in one short radio transmission, conditions can change instantly. His responsibility is immense and much is expected of the forward observer.

During the Korean War, the forward observer was indispensable. With Korea's rolling hills and valleys, high-peaked mountains and large irrigated farming areas, the forward observer was relied on to mitigate the effects of terrain and to set the conditions for offensive and defensive operations. Serving in a dangerous profession, the observer

was positioned forward with the infantry, often in contact, and a sought after target of the enemy in his static observation post (OP). A skilled forward observer was a combat multiplier. Ralph Carver a former infantry platoon sergeant during World War II, notes “it did not take long to realize the importance of coordination with artillery. Most of us, at one time or another, probably owed our lives to artillery support...they shared our wet, muddy foxholes, our misery, our fears, and the courage it often took to just keep going. The FO teams along with the medics, soon had the respect and highest regard of the infantry.”<sup>5</sup> Retired Marine Corps General Bernard E. Trainor expressed his appreciation for the FO when he wrote, “having had combat commands in two wars I have high regard for FOs and owe my life to them on more than one occasion.”<sup>6</sup>

In 1975, in response to a renewed Soviet threat, Training and Doctrine Command (TRADOC) tasked the FA School to analyze the current fire support system and provide recommendations. Despite its effectiveness since World War II, the FO concept was revised. The recommendations included creating a Fire Support Team (FIST) which was associated with each maneuver battalion in the Army but assigned to the field artillery battalion. The FIST was made up of a lieutenant serving as the company fire support coordinator, a fire support NCO, and enlisted forward observers for each company platoon. The FIST enlisted personnel trained under a new artillery specialty, 13F.<sup>7</sup> The transition to this new structure was completed in 1978.

Throughout the Cold war and since the beginning of the Global War on Terror, the field artillery as a branch, has unquestionably displayed flexibility, contributing to the fight in many different ways. More often than not, the contributions have been by way of non-standard or in-lieu of missions; infantry, base defense, convoy security escort, etc.

The time between multiple deployments as a part of the Army Forces Generation (ARFORGEN) model is short, leaving little time to train on basic artillery skills. As a result, FA core competency skills have eroded over time. Today's fire support officers, Non-Commissioned Officers (NCO), and soldiers possess few of the pre-requisite core competencies expected of their predecessors. The operational environment (OE) they have worked in has clearly eroded many critical skills. The last ten years of unconventional warfare (UW) has all but guaranteed tomorrow's Fires battalion commanders will lack the same abilities possessed by commanders who preceded them.

In 2007, three former maneuver brigade commanders wrote a White Paper, titled, "The King and I: The Impending Crisis in Field Artillery's ability to provide Fire Support to Maneuver Commanders." The paper described how the Field Artillery as a branch was suffering an identity crisis as a result of the Army's transformation which formerly began in 2005. The authors described in many ways how "... we continue to let these perishable skills atrophy and lose our expert practitioners, we are mortgaging not only today's fight, but our ability to fight the next war as well."<sup>8</sup> The arguments described were a bit dramatic, but in many cases, extremely accurate. As a result, the White Paper received much needed reaction out of senior Fires leaders as well as Army senior leaders to include the TRADOC commander and Vice Chief of Staff (VCSA) who began to ask questions of their senior fire supporters on ways in which to address these perceived issues in the field artillery.

### Beginning of a Problem

In 1999, the first Stryker Brigade Combat Team (SBCT) was formed at Fort Lewis, Washington. Under the SBCT's Modified Table of Organization and Equipment

(MTOE), the 13F Military Occupational Specialty (MOS), fire support personnel were assigned directly to infantry companies or cavalry troops of their respective battalion and squadron thus altering the original concept envisioned in 1978. Later, modularity as a part of Army transformation eliminated the Division Artillery; this decentralization resulted in field artillery battalions being re-assigned directly to maneuver brigade headquarters and further re-assignment of fire support personnel to maneuver companies and battalion headquarters. This re-organization effectively removed the experts from providing direct oversight over fire support personnel. Immediately, frustrated Brigade and Battalion Fire Support Officers (FSO) and Non-Commissioned Officers lost the ability to influence personnel management, training, and proper maintenance of equipment. The Direct Support Field Artillery commander and Command Sergeant Major (CSM) no longer had direct impact on the training and certification of officers and NCOs in addition to their manning and professional development. These issues and many others, were the unintended consequences of Modularity.

Of the unintended consequences, a major challenge created by Modularity, was the degradation of skills in those soldiers that coordinate and synchronize fire support for a maneuver commander, the fire supporter. “Often, fire supporters at Battalion and Company level do not receive sufficient oversight from experienced fire support leaders as they conduct their pre-deployment certifications prior to deployment.”<sup>9</sup> Nor do they receive the requisite attention during the train phase of ARFORGEN.

Over the past several years, Observer/Controllers (O/C) at the Joint Readiness Training Center (JRTC) have consistently identified the challenges described above. In

2008, senior fire support OCs at the Joint Readiness Training Center (JRTC), National Training Center (NTC), and Joint Multinational Readiness Center (JRMC) published a Joint White Paper titled, CTC Fire Support Trends and Causes 2006-2008: A System Under Stress. The authors stated “the primary cause for the degradation in demonstrated fire support skills is the current ‘modular’ fire support system. The maneuver leaders who are now totally responsible for the training, certification, and employment of the teams were never prepared by our training system to do so successfully.”<sup>10</sup> As a result, a greater percentage of fire supporters arrive at these training centers having not conducted a basic fire support certification and for those that have, many have not even conducted the hands on portion. In addition, most Brigade Combat Team (BCT) FA battalion commanders are not serving as the BCT Fire Support Coordinator (FSCOORD). Those that are tasked by the BCT commander to train the brigade’s fire support personnel do not have the authority to enforce attendance and maneuver battalion commanders do not feel compelled to support the training. One of the most disturbing trends is the near-total cessation of lethal fire planning at all levels within the BCT. Despite its employment in Iraq and extensive use in Afghanistan, lethal fire planning has virtually stopped.

Current 2011 JRTC trends highlight that maneuver Platoon Leaders (PL), Platoon Sergeants (PSG), Company Commanders, and Battalion Operations Officers etc. are not qualified to train, evaluate, and certify fire support leaders and teams. Often by default, their untrained assigned fire support personnel conduct these important tasks. Fire support readiness, performance, and equipment status are not typically a concern or addressed during unit status reporting (USR) or periodic training briefs. The

fire support teams no longer own their own equipment, the supported unit does. As a result, their equipment is often used for other purposes, or to cover shortages or replace broken equipment. Furthermore, in a 2010 briefing to Fort Benning's commanding general (CG), the FCoE commandant described additional negative fire support trends. These included deficiencies in the professional development of Company FSOs and Targeting Warrant Officers and their inability to conduct detailed fire planning and integration of fire support plans with maneuver. Additionally, he highlighted that fire support personnel are ineffectively employed,<sup>11</sup> as indicated in one Stryker Brigade Combat Team (SBCT).

During 5<sup>th</sup> Brigade, 2<sup>nd</sup> Infantry Division SBCT's preparation and deployment to Afghanistan in July 2009, several fire support related issues were identified. In one instance a necessary Brigade directed fire support certification was not completed due to pressing administrative requirements deemed more important. Units that did participate, clearly demonstrated a greater capability to synchronize fires as was reflected in the tremendous successes achieved with fires during major combat operations. In addition, senior fire support NCOs were generally mismanaged and improperly utilized. For example, one unit mismanaged fire support personnel while deployed to the point that a company fire support team was unable to effectively employ company mortars during a major battalion operation. While one unit was short senior fire NCOs, another unit that was over in senior NCO strength, assigned a senior fire support NCO to serve as a retention NCO and another served as the commander's personal security detachment (PSD) NCO.<sup>12</sup> The decentralized training and management of fire support personnel yielded inconsistent results. Finally, an October

2009 Regional Command-East (RC-E) Fire Support Assessment highlighted fire support trends in which forward observers were challenged in identifying correct target locations, twice resulting in firing incidents. Inadequate fire support plans were the norm for deliberate operations as well as a limited use of target list work sheets and fire support coordination measures which could have resulted in additional firing incidents.<sup>13</sup>

Despite these disturbing trends, time, resources, and proper leadership will eventually overcome these issues. There is still a population of competent and experienced junior soldiers, NCOs, and officers at every level in the force. What may be the biggest concern is the population of maneuver leaders that have been created as a result of modularity and their combat experiences. Modularity and years of conflict in Iraq and Afghanistan have resulted in seasoned, highly experienced maneuver commanders with minimal or no experience synchronizing fires in to combined arms operations. These are the same leaders the Army expects to embrace Fires and train those that synchronize and control its employment.

### Reaction

In reaction to the “King and I” white paper, the former, Fires Center of Excellence (FCoE) commandant, Major General (MG) Vangjel was required to provide the TRADOC commander an assessment of the state of the FA branch and recommendations to fix problems that existed. In his assessment, MG Vangjel described how lethal skills had atrophied due to persistent conflict, modularity, and the expansion of skill sets. The combination of these changes had an accumulative effect. Additionally, the demand for Field Artillery units and soldiers to perform both ‘non-standard’ as well as FA core competency missions had increased and over time core field artillery competencies had expanded to include non-lethal targeting, information

operations, and company intelligence fusion. Additionally, MG Vangjel described how Division FSCOORDs were witnessing the degradation of fire support skills but had little authority to assist and scarce resources.<sup>14</sup> Of the recommendations provided, re-assigning fire support personnel to Fires battalions directly supervised by the Fires Battalion Commander serving as the Brigade FSCOORD would provide quick pay off at a low cost. Needless to say, this recommendation was not approved, and thus, atrophy of basics skills continued.

LTG William B. Caldwell, then the Commanding General of the Combined Arms Center at Fort Leavenworth, Kansas responded to the “King and I” article in his remarks at the 2008 Fires Conference stating, “I hear they can’t synchronize fires, and yet I read reports from the field about LTs less than a year removed from this school controlling and synchronizing several different types of UAVs, and rotary wing aircraft in direct support or counter terrorist operations...while the next day are planning and implementing multi-million dollar reconstruction projects. We must be able to do basic skill sets well, but we must ask ourselves at what level do we maintain these skills until we can get back to training for major combat operations again...”<sup>15</sup> Additionally, he recognized other heroic feats junior field artilleryman have achieved in support of operations in Afghanistan and Iraq. The current TRADOC commander, Lieutenant General (LTG) Cone stated at the 2011 Fires Conference, “to be as adaptable as you artillerymen have been has cost a significant price.”<sup>16</sup> The branch acknowledges that the contributions it has provided over the last decade have been important ones - contributions made by extremely professional and capable artillerymen. However, tactical commanders are not satisfied with the quality of performance of their

artilleryman as artilleryman. Commanders recognize a fire support training problem exists and expect a solution to what has become a persistent and increasingly significant problem across the force. Clearly Army senior leaders acknowledge a problem exists but have not appropriately addressed it up to this point.

In 2011, a White Paper titled “Fixing Fires: Adaptability and Change in the Field Artillery” was written to address solutions to existing problems. The paper addressed some of the same issues identified in the “King and I” and highlighted additional gaps that exist in the Field Artillery. The author’s number one gap identified was, “Operating Force: Inability to Provide Effective Fires for Maneuver.” In the description of this gap, the author explained the atrophy of fire support skills resulted from Modularity. Specifically, “fire supporters are assigned directly to maneuver units and are not under the direct supervision and mentorship of the fires battalion commander.”<sup>17</sup> Within maneuver battalions, the responsibility to certify FISTs is left up to an inexperienced captain that often does not possess any fire support experience. The battalion operations officer, commander and CSM cannot effectively supervise training and certifications because they do not have the experience nor do they seek the expertise of senior artilleryman within the BCT to assist.

### Institutional Solutions

The Fires Center of Excellence (FCoE) has recently taken proactive steps to solve the fire support training problem through the Force Design Update (FDU) process. Before the Fire Support Reorganization FDU was submitted, the FCoE gained concurrence with the Maneuver Center of Excellence (MCoE), that a fire support reorganization was indeed required to finally solve the fire support training and certification issues. As a part of the justification for change, the FDU highlights the

unintended consequences of Modularity. Specifically, the FDU highlights that the maneuver commander's ability to plan, integrate, and coordinate fires has been weakened considerably. Senior artillery leader oversight to fire support training and certification no longer exists. The repetitive deployments with short dwell times over the last several years, have over time, eroded the fire supporters ability to confidently execute core fire support tasks.<sup>18</sup> In sum, the FCoE's proposal is to assign fire support personnel to the direct support FA battalion organization that existed during pre-Modularity. Unlike many force design updates, this one requires very little change in people and equipment. Soldier end strength and equipment remains unchanged while only the organizational assignment serves as the sole consideration.

There are many advantages to returning fire support personnel to the pre-Modularity design. The proposed changes will provide maneuver commanders trained fire support personnel able to more effectively plan, coordinate, and synchronize lethal and non-lethal fires in any operational environment. The direct support artillery battalion commander would once again reassume his role as the Brigade Fire Support Coordinator, singularly responsible for the fire support training readiness at all levels within a BCT. His knowledge, training and combined experience with his field grade officers and senior non-commissioned officers will be leveraged to ensure trained and ready soldiers and equipment meet the standard. With the ability to manage people, the FSCOORD and his Command Sergeant Major can influence the professional development of officers and NCOs ensuring they receive the right training at the right time of their careers. Additionally the management of NCOs allows for equity in quality of fire support trainers across the brigade.

The “gunnery team” made up of the cannon crew, fire direction center (FDC), and forward observer, is once again back together, able to effectively train and rehearse on the technical aspects of delivering fires from the call for fire (CFF) to rounds impacting on a target. Senior fire support NCOs will be able to once again provide technical and tactical expertise in training, maintenance of equipment, and mentoring junior officers. “This organization also allows the BCT commander to task organize fires capabilities based on the full spectrum of operations, mission priorities, and training status. Organizing the BCT fires support personnel under the [Headquarters and Headquarters Battery] HHB of his organic Fires Battalion enables the BCT commander to train and prepare for success in executing the fire support challenges of the future.”<sup>19</sup> Putting the responsibility for training back on the experts seems to be an obvious solution. Understandably, some may argue this approach to fixing the problem, is not the right solution.

The field artillery branch should brace for a negative reaction from some maneuver commanders. In a negative response to the FCoE’s FDU proposal, Brigade commanders in disagreement with the FDU have concurred that consolidated FIST training and certification run by the FA commander will suffice. One Brigade commander described mitigating personnel issues through the execution of this “theory”. Another commander stated, “the idea behind modularity was to task organize into teams at the BCT and Bn level – this COA tears at this team concept.”<sup>20</sup> Although the concept they describe is sound, the reality is, every commander will execute that concept differently, with different standards, priorities, and results. By assuming that there will be consistency across the Army only lends to the marginal performance commanders

currently experience. Building a cohesive team is an important part of any effective organization. There is no doubt, soldiers that live, train, and fight together, will perform better together. That theory for the most part remains unchanged under the reassignment of fire support to a fires battalion. Since post-Vietnam War, the artillery forward observer or fire support team was assigned to an artillery battalion and trained and supervised by artillerymen. This organization worked very well for over 30 years. Infantry and armor battalions were always supported by habitually attached fire support teams and fire support elements (FSE) during collective training. Company fire support officers (FSO) and NCOs synchronized training with company commanders at company training meetings and through daily coordination. Relationships, team building, and integration were developed and enhanced during leader development training, live fire training, and platoon and higher collective training. In a discussion about ARFORGEN fire support training, a infantry battalion CSM summarized that he would rather have a trained FIST un-integrated than an integrated FIST untrained.<sup>21</sup> Putting personalities aside, this approach to fire support training and integration into maneuver formations at all levels worked.

Another option exists that may be more palatable to the MCoE and maneuver leadership. The consolidation of fire support personnel under the HHC of the BCT is not optimal but certainly a feasible solution. What does not change under this approach is the importance of both the BCT FSCOORD and his CSM's involvement in training oversight and readiness of all BCT fire support training and equipment. Under this alternative approach, the Brigade FSO and his fire support non-commissioned officer (FSNCO) have daily oversight for all activities of fire support personnel in coordination

with the HHC leadership. Although in this option, a company commander loses and extra officer, NCOs, and soldiers during daily garrison activities, in the end he will receive a better trained and ready fire support team. This option continues to ensure proper oversight of personnel, training, and professional development of fire support personnel.

Nonetheless, what must change under this second option is the culture. The culture must be one in which all leaders expect the Fires battalion to take the lead in all fire support related matters to include training, personnel, maintenance, and equipment. Maneuver commanders should establish and maintain open communications with the DS FA battalion commander and his staff leveraging their expertise, time, and resources to train their fire support teams. The BCT commander creates this climate in order to achieve his desired effect, trained fire supporters capable of the expert synchronization of all fires.

### Future Ammunition Requirements

Attacking targets with precision munitions has become a key component to achieving strategic and tactical objectives, despite inconsistent FO proficiency in the use of precision targeting tools which has become problematic. However, aside from the issue of fire support training and certification, the time is now for the Army to regain and maintain its ability to employ the use and sustainment of conventional artillery munitions. The U.S. field artillery possesses an unprecedented ability to deliver accurate and timely operational and tactical fires with conventional and non-conventional munitions in support of commanders at all levels. What sets the U.S. field artillery apart from the rest of the world, have been the initiatives taken to develop and field the best munitions and equipment possible. With the introduction of rocket and

cannon precision guided munitions, comes increased lethality and desired effects. Delivery systems such as the M777A2 155mm towed howitzer with an on board self locating and self laying capability has increased weapon accuracy and timeliness of occupation. The Fires Center of Excellence (FCoE) at Fort Sill is constantly seeking ways to maintain the credibility it shares with the rest of the Army. The FCoE remains relevant as it seeks improvements to better service their customers in an uncertain environment. The United States Army Functional Concept for Fires, dated 13 October 2010 best describes the expectations of the Fires war fighting function in that uncertain environment.

Operational adaptable fires provide the Army with versatile capabilities to respond to a uncertainty and complexity; enable the defeat of a wide range of threats; provide timely and responsive fires in environmental and operational conditions; provide a range of precision to conventional scalable capabilities to engage ground targets and aerial threats, prevent fratricide and minimize collateral damage; provide access to and integrate joint, Army, and multifunctional fire capabilities at the lowest appropriate levels.<sup>22</sup>

As a consequence of the global financial crisis, many countries have or will reduce their defense spending. "Created as part of the Budget Control Act of 2011, enacted in August 2011 to raise the debt ceiling and prevent a government default, the Joint Select Committee on Deficit Reduction - the "Super Committee" was given until November 23, 2011 (almost four months) to agree on a plan to cut \$1.2 trillion in spending over the next 10 years. But less than a week after the national debt exceeded \$15 trillion, the Super Committee admitted super failure."<sup>23</sup> With the Super Committee's inability to meet an agreement, the \$1.2 trillion in Department of Defense cuts will have a direct affect on the FCoE's ability to fund current and future programs. Some tough decisions will have to be made and priorities re-established. As the Army downsizes, so

too will the Field Artillery and the requirement to responsibly achieve the Army's functional concept for fires, a concept that may not fully come to fruition based on an extremely complex and fluid environment, capable of dramatic change in a very short period of time.

One of the core strengths of the field artillery has always been its ability to mass fires. However, as was the case after the Korean War, the desire for a smaller force structure with increased mobility and survivability over mass became the priority. During the Korean War it was believed that our nuclear arsenal weapons would compensate for the inability to mass conventional weapons as effectively - resulting from in a decrease in the number of weapon systems. A 280mm cannon was initially redesigned specifically to deliver a tactical nuclear warhead before conventional artillery cannons possessed the capability. As an interim measure in adapting to a nuclear battlefield, in 1956, a reorganization of division artillery referred to as Reorganization of Current Infantry Division (ROCID) took place in order to meet the demand for a smaller force while simultaneously maintaining the capability to support the Division in a nuclear fight.<sup>24</sup> "Following two years of evaluation, major modifications were made in the ROCID division. The principle changes in the division artillery were designed to provide a substantial increase in conventional firepower and to centralize artillery fire support."<sup>25</sup> There was never a need to deliver nuclear weapons during the Cold War yet we still maintained the capability. The Cold War ended and with it our reliance on nuclear weapons as a deterrent. Desert Storm, the first post-Cold War conflict the U.S. was involved in tested the Army's conventional artillery capabilities. The effects of massing conventional munitions was extremely successful in softening up Iraqi positions along

the Kuwait border prior to the VII Corps attack. The 42<sup>nd</sup> Field Artillery Brigade alone fired over 5400 artillery shells in support of four divisions during the attack.<sup>26</sup> Conventional ammunition remains in the current inventory because there has and always will be a use for it in mass quantities in the future despite how expensive it may be. In a brief to the CG of Fort Benning and commandant of the MCoE, the Commandant of the FCoE described to them how artillery battalions have lost the ability to mass fires and are challenged with the employment of precision munitions and achieving consistent accuracy with conventional munitions.<sup>27</sup> The fact that he highlighted these issues, indicates the importance he put on these critical tasks.

### Cost Savings

The Army can be described as an institution that is reliant or focused on effectiveness and less on efficiency, and for good reason. We do not want leaders making tactical decisions based on the financial constraints that realistically do not exist in a combat environment. Yet there are some who believe that, in the long term, precision guided munitions will increase cost savings because fewer rounds will have to be delivered to destroy a specific target. Author Major J. Christopher Lewis in an article titled The Future Artillery Force...Today: On-the Horizon Changes for Artillery described the potential cost savings of precision guided munitions stating, “armed with precision munitions, three rounds may be fired in place of massed battalion fires providing a more cost-effective method of destroying the target.”<sup>28</sup> Although this may be true, it is not the cost savings that should be the consideration, but the effect that one round will achieve. The reality is, precision munitions like Guided Multiple Launch Rocket System (GMLRS) and EXCALIBUR are expensive and in short supply. Constraints are placed on their employment and rarely if at all, can you obtain them during training. When considering

basic economics and supply and demand, if the demand does not exist, supply will not follow. Currently the high demand for precision munitions does not exist because they are not being used at high rates due to short supply or tight restrictions as to who can approve their delivery and at what types of targets they can engage. The current operational environment has taught commanders to rely on precision guided munitions to attack High Value Targets (HVT) or targets where collateral damage is a concern. However, precision guided munitions are costly and will be employed judiciously. Until the supply of precision munitions increases, the perception of low demand will always exist.

### Logistical Consideration

Arguably precision munitions will reduce logistical requirements. The more accurate the round, the fewer rounds required to achieve a desired effect on the target. The assumption that must be made in this argument is that the number of targets will be limited, otherwise a logistical strain, may in fact exist. Training and Doctrine Command Pamphlet 525-3-4 briefly describes this concept stating, “near precision and precision capabilities reduce the number of munitions required to achieve the required effects, making indirect fires more efficient, and thereby reducing Class V sustain demands.”<sup>29</sup> In 1999, the National Academy Press released a report published by the National Research Council that alludes to a reduction in logistical requirements with regard to precision munitions. In a 28 November 2011 Army Times article, the author described how the M1130E1 High Explosive Pre-Formed Fragments artillery round may have enough of an effect that it could replace four high-explosive rounds thus lightening the load for howitzer units. “Eliminating the four shells is expected to reduce the logistics burden for units by 50 percent to 75 percent,”<sup>30</sup> stated the Program Executive Office

(PEO) Ammunition's Project Manager. The goal is to always achieve effectiveness, not efficiency. As our adversaries adapt to our methods of attacking them, they will surely understand there is a need to adapt their force protection methods.

In an article written shortly after the Crusader cannon program was eliminated, author Tommy Tracey discussed the transformation of field artillery in an article titled, "Field Artillery at the Crossroads of Transformation." He posits, "as weapons munitions become more sophisticated, targets might not necessarily become easier to destroy, of for no other reason than measures humans take to survive. Those who have the will to survive or who are in a blinding rage of hate will find ways to defeat U.S. technology"<sup>31</sup> With this assumption, may come a potential requirement to deliver an increased volume of fire resulting in a potentially unforeseen logistical strain. However, during any operation, commanders at every level are more concerned about effectiveness and of little concern for efficiency. A trained observer will save more rounds than new innovations in equipment and technology.

### Massing Fires

Neither the Army leadership nor anyone else, should be quick to dismiss the utility of conventional munitions and the massing of these munitions for the sake of budgetary constraints. President George W. Bush identified North Korea as one of three rogue states, a country with a sizeable army and a significant indirect fire capability. Tracy, again supports this stating, "military leaders should not dismiss lethal and non-lethal artillery when exercising instruments of military power. Arguably, the best way to destroy artillery is with artillery...According to Army interpretations of North Korean offensive doctrine, attacking Korean forces could count on 150 to 180 artillery tubes per 1-kilometer(km) frontage and an inventory totaling 10,400 artillery pieces..."<sup>32</sup> The

Korean War has been described as an Artillery War. Much success was derived from massed artillery during offensive and defensive operations. What has virtually remained unchanged in over 50 years on the Korean peninsula is the physical environment and North Korea's indirect fire capability. This may be an indicator that many of the same conventional tactics used during the Korean War may need to be employed in a future conflict with North Korea. Author Christopher Lewis in describing the sole utility of precision guided munitions comments that, "networked artillery forces firing precision rounds at precisely located targets will obviate the requirement to mass fires on many target types, including area targets."<sup>33</sup> What he does not describe is the inability of precision guided munitions to effectively destroy large formations or dispersed targets in and amongst undulating diverse terrain that exists in Korea. Retired Colonel Daniel Whiteside argues that the bomb capable of being put through a window will have a limited effect on a large concentration of enemy troops.<sup>34</sup> The last two conflicts with Iraq has proven the utility of precision munitions, the next one may not.

### Afghanistan and Beyond

In the January 2012 Fires Journal article, the author Gene Meredith briefly described the success U.S. Marines have achieved in Regional Command-South (RC-S) employing EXCALIBUR. However, in RC-E, the Army shot 22 times the total number of rounds than the Marines in RC-S.<sup>35</sup> Despite the differences in the two operating environments in these two regional commands, the requirement for both precision and conventional munitions existed in varying degrees.

The reliance on technical solutions to military problems is potentially problematic in future fights. The United States' adversaries will undoubtedly attempt to attack satellite based systems thereby degrading the capability to utilize equipment and

munitions reliant on GPS (Global Positioning System). An adversary may conduct electronic attack and jamming operations to degrade U.S. military capabilities. Whether an attack on satellites has a short-term or long-term effect, the ability to conduct degraded operations will quickly become necessary in order to maintain an advantage and deny the enemy the ability to achieve strategic or tactical success. In this type of operating environment, field artillery units will be expected to maintain and sustain their arsenal of conventional ammunition. More importantly they will be required to operate their GPS aided equipment in a degraded mode as well.

In the January 2012 Joint Operational Access Concept, the Chairman of the Joints Chiefs of Staff (CJCS) described future threats that include advanced long-range weapons designed to keep forces away and short-range arms designed to limit freedom of action. The concept's focus is on anti-access and area-denial threats. "Establishing operational access may require forcible entry, the projection of land forces onto hostile territory in the face of armed opposition".<sup>36</sup> This threat could easily be interpreted as a well defended threat. A threat that will be effectively addressed in a lethal nature with a combined arms operation incorporating well trained forward observers employing precision and conventional indirect fire munitions.

### Recommendations

First, instead of half stepping the correction by making an internal reorganization, a wholesale realignment of fire support personnel within the Brigade Combat Team is required. Fire support personnel should be assigned to the direct support field artillery battalion and further attached to habitually associated maneuver battalions and squadrons during collective training and operational deployments. Additionally, the direct support field artillery battalion commander would serve as the Brigade

Commander's Fire Support Coordinator and held accountable for the training readiness, and career management of all fire support personnel and maintenance of equipment. A centralized structure of training and personnel management monitored and evaluated by leaders with experience is the best solution when trying to make up for lost time. Discipline in training management is required to reverse current trends in the shortest period of time. The Brigade FSCOORD has a staff that will manage, resource, and train and evaluate fire support teams for the entire brigade while the FSCOORD and his CSM are more apt to properly manage and eliminate training distractors. Many fire support NCOs will eventually serve in an artillery organization as an Operations Sergeant or First Sergeant. These NCOs require professional mentorship and development, something the DS FA battalion CSM is unquestionably more capable of providing. As the senior fire support trainer, the DS FA battalion CSM in conjunction with the Brigade FSNCO, will enforce standards in training, maintenance, and discipline while managing the distribution of enlisted soldiers to support the BCT. Finally, each Division should establish fire support standards similar to the Red Book published by the 82<sup>nd</sup> and 1<sup>st</sup> Cavalry Division. These standards, above and beyond what is published in doctrine, will provide a base line for which commanders can ensure their fire support personnel can perform the basic skills expected of them. With these skills, the commander is assured the proper synchronization and safe employment of all fires.

Second, the Army must continue to train all artilleryman on the employment of conventional artillery and mortar munitions in addition to retaining a balance in its conventional and precision arsenal. With that, continue to leverage technology to increase the lethality of conventional munitions, (ie. Precision Guided Kits for ballistic

projectiles). In a fiscally constrained environment as the Army operates in today, establishing priorities and assuming risk is essential to managing diminishing resources. The future is unpredictable despite the United States Government 's (USG) best efforts to anticipate the next threat. What is predictable is that the USG's strategic goals and objectives will be challenged in ways that may require military intervention and the use of conventional munitions as has been the case in every major conflict since World War I. In the end, it will be the effectiveness, not the efficiency that will make the difference in achieving the Nations strategic aims. The ability to mass batteries and battalions is a lost art, a direct reflection on the way in which artillery has been fought in support of counter insurgency operations over the last several years. Engaging the future threat may require the massing of artillery units to achieve a desired effect, an effect that may require large amounts of ammunition. This was a basic evaluated task mastered by artillerymen in years past and must be mastered once again.

"As BCT commanders, we were fortunate to have FA battalion commanders who grew up under the old system and were tactically and technically superb. We had the best of both worlds – highly trained artillery that was fully integrated into our BCTs."<sup>37</sup> These commanders were describing their experiences of pre-Modularity. Achieving what they describe is still possible if the Army acts now.

### Conclusion

An institutional change is required. Left in the hands of maneuver brigade and battalion commanders, the Army will experience inconsistent results while the training readiness of the Fires war fighting function and a population of fire supporters continues to fail at executing basic fire support tasks. No matter what the Army's fire support organization looks like, in the end, it is the BCT commander's responsibility to ensure

fire support personnel are trained and integrated into every formation. He should consistently hold battalion commanders accountable for the proper training and management of his fire support personnel and leverage the expertise of the Fires battalion commander and command sergeant major who can provide the necessary oversight to fire support training, personnel management, and professional development. BCT commanders should demand an honest fire support assessment from their commanders and leverage other expertise to include Fires Brigades and the FCoE. Trained and ready artillerymen that are proficient at their basic core competencies will once again be a large contributor to combine arms warfare that will be fought in future wars.

Einstein once commented, “I know not with what weapons World War III will be fought, but World War IV will be fought with sticks and stones”.<sup>38</sup> Leveraging technology has many advantages but if relied upon to achieve military solutions, the results could be catastrophic. Getting back to the basics, back to what has made the field artillery so successful in the past is what is required. Through years of conflict, the U.S. artilleryman has adapted to an ever changing environment and threat, threats that have also adapted in that very same environment. One can expect a continued evolution but should not shelve forever, the very things that facilitated success- brilliance at the basics. Allowing technology to outdistance basic tactics, techniques, and procedures, is a dangerous dynamic. Facing uncertainty and change in the future will require an understanding of the basics no matter what operational environment exists. If the issues in this paper are not properly addressed now, the Army will once again put soldiers and the mission at risk.

## Endnotes

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<sup>15</sup> William B. Caldwell, Remarks at the Fires Seminar at Ft. Sill, OK, June 3, 2008, 3.

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<sup>18</sup> Operational and Organizational Concept Paper, Fire Support Reorganization FDU, submitted to TRADOC, October 17, 2011.

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